

Notice of Allowability

Application No.

10/750,979

Applicant(s)

LEE, DONG-HO

Examiner

Art Unit

Thao X. Le

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04/18/06.
2. ☒ The allowed claim(s) is/are 1,3-10,13,21,22 and 24-34.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with the Applicant's Attorney, Mr. Hosoon Lee, on 015 May 2006. The application has been amended as follows:

In the claim:

- Claim 21:
 - o line 2 after "scale package having a" insert -----first-----
 - o line 6 after "second sides of the" insert -----first-----
 - o line 7 after "lower surface of the" insert -----first-----
 - o line 9 after "scale package having a" insert -----second-----
 - o line 12 after "an upper surface of the" insert -----second-----
 - o line 13 after "second sides of the" insert -----second-----
 - o line 13 after "scale package; the" delete "first" and insert -----
second-----
 - o line 14 after "lower surface of the" insert -----second-----
 - o line 16 after "lower surface of the" insert -----first and second-----
 - o line 16 after "substrate of the" insert -----first and second-----

- line 17 after "opposite direction" insert -----of the upper surfaces of the first and second lower surfaces-----
- line 21 after "second chip scale packages" insert -----and on the lower surface of the first and second substrates----

- Claim 30:

- line 7 after "outside the given" insert -----first-----
- line 18 after "second connection pads" insert -----on the opposite surfaces of the first and second substrates-----

2. The following is an examiner's statement of reasons for allowance:

a. Claims 1, 3-10 and 13 are allowed because the prior art of record is neither anticipated nor rendered obvious all the limitations of the base claim 1 including a plurality of circuit pattern terminating in a plurality of connection pads formed outside the area in which the ball land pads are formed and by ends of stack package side-connecting board having patterns electrically connected to the plurality of connection pads of the circuit pattern on the lower surface of the substrate on the upper stacked chip and the plurality .

b. Claims 21-22 and 24-26 are allowed because the prior art of record is neither anticipated nor rendered obvious all the limitations of the base claim 21 including a plurality of first connection pads outside the defined first area, a plurality of second connection pads outside the defined second area, the plurality of first connection pads and the plurality of second connection pads are electrically connected with one another via connecting board to the first and

second sides of the first and second chip scales packages on the lower surfaces of the first and second substrates.

c. Claims 27-29 are allowed because the prior art of record is neither anticipated nor rendered obvious all the limitations of the base claim 27 including a plurality of connection pads formed outside of the region of the substrate on which the plurality of ball land pads are formed, the upper stacked chip scale package are electrically connected to the circuit patterns on the lower surface of the substrate of the lower stacked chip scale package by connecting boards electrically connected through the connection pads to the circuit patterns on the lower surface of the substrate on the upper stacked chip and through the connection pads to the circuit patterns on the lower surface of the substrate of the lower stacked chip.

d. Claims 30-34 are allowed because the prior art of record is neither anticipated nor rendered obvious all the limitations of the base claim 27 including the plurality of first circuit patterns terminating outside the given first area in a plurality of first connection pads, the plurality of second circuit patterns terminating outside the given second area in a plurality of second connection pads, the first and the second chip scale packages being interconnected by one or more connecting boards extending between and electrically connecting the plurality of first connection pads with the plurality of second connection pads on the opposite surfaces of the first and second substrates.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'Thao X. Le', with a long horizontal line extending to the right.

Thao X. Le
16 May 2006